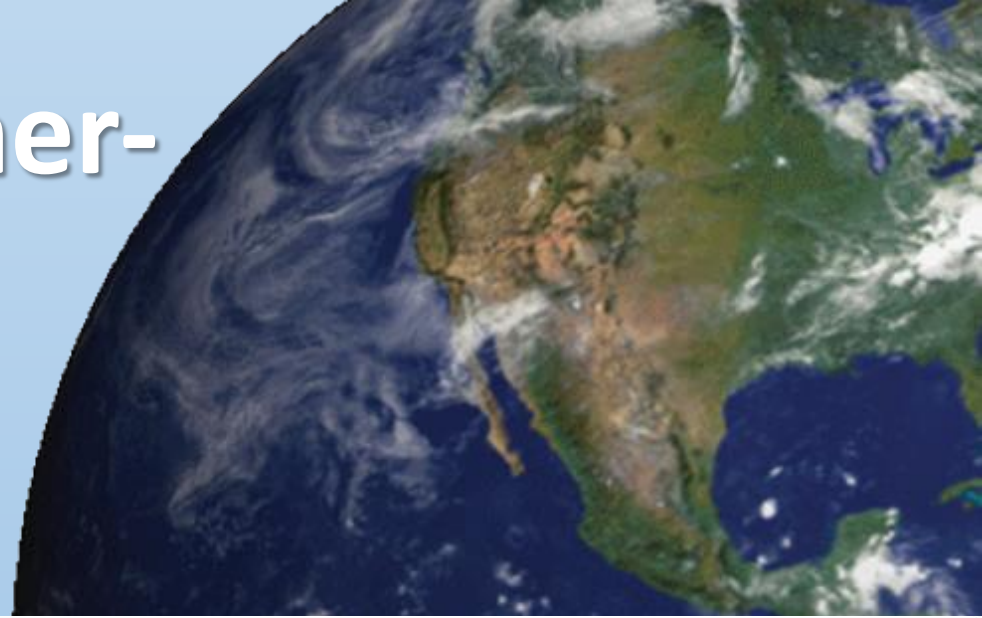
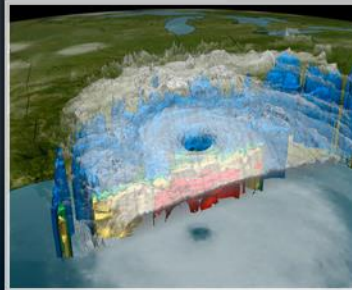
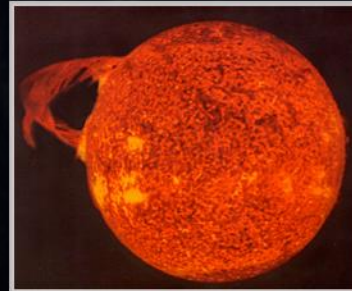
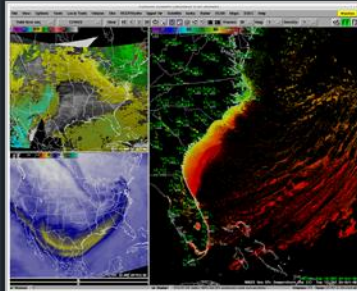


# Building a Weather-Ready Nation



*NWS Partners Meeting – Technical Session  
January 14, 2016 • New Orleans, LA*





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  - *NOAA National Operational Model Archive and Distribution System (NOMADS) and FTPPRD*
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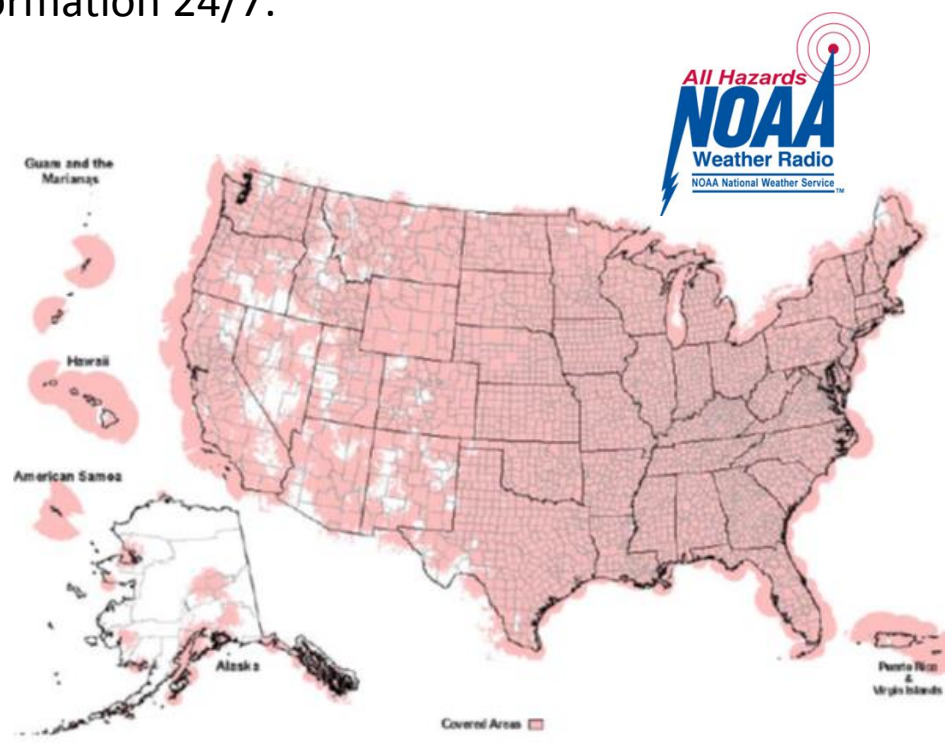
# Dissemination Technical Services: *NOAA Weather Radio Transformational Change*



**NOAA Weather Radio All Hazards (NWR)** is a multi-mission program serving a variety of users, markets and the nation using broadcast Radio Frequency technology. Since the mid-50s NWR has been broadcasting continuous weather information and official warnings, watches, forecasts and other hazard information 24/7.

**Challenge:** NWR is currently outpaced by technological advancements in accuracy and targeting of other dissemination media. Additionally, NWR is not sustainable in its current model as a \$13 million/yr. program with costs escalating about +7% per year.

**Opportunity:** The Transformational Change (TC) process provides NWS the opportunity to meaningfully engage with partners to design and develop a replacement system that will be capable of supporting multiple dissemination platforms.



*NOAA Weather Radio All Hazards Coverage*

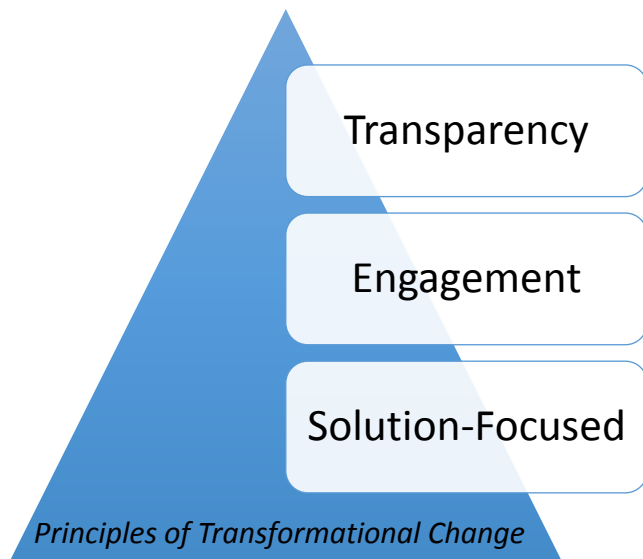




# Dissemination Technical Services: *NOAA Weather Radio Transformational Change*



**What is Transformational Change (TC)?**: TC is an objective and transparent decision-making process to guide significant organizational and operational changes within the NWS.



**What is Stakeholder Engagement?:** A process using social science methods to involve key NWR stakeholders in action-oriented dialogue for the purpose of obtaining relevant, key user requirements for the design, development and implementation of a new future NWR All Hazards network.

## **Stakeholder Engagement Objectives:**

- 1) Identify NWR user needs by engaging stakeholders across the Weather enterprise
- 2) Determine future NWR system requirements through analysis of user needs
- 3) Identify emerging technologies to augment and/or replace obsolete equipment
- 4) Provide a viable, sustainable path forward for NWR.



# Dissemination Technical Services:

## *NOAA Weather Radio Transformational Change*

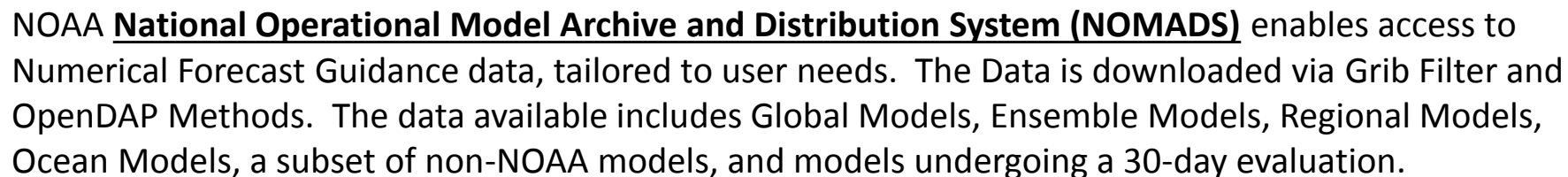


### **Anticipated Benefits:**

- On-going communication and interaction with key NWS stakeholders to maintain strong relationships with partners
- A solid, focused user requirements document to serve as the 'blueprint' to build a better NWR – agile and sustainable
- Significant contribution to mission goals – working with partners to build a society that is prepared for and responds properly to weather-dependent events and risks.

### **Next Steps:**

- Participation in NWS Customer Satisfaction Survey and provide initial input into the process (Jan. 18-31, 2015)



**FTPDRD** is a site with access to full GRIB2 model data only / no cut-splice-dice

**NOMADS**  
**Total Number of Hits**

relative in this

Number of Hits

**NOMADS:** <http://nomads.ncep.noaa.gov/>    **FTPFRD:** <http://ftpprd.ncep.noaa.gov/>  
**NOMADS Parallel Models:** <http://para.nomads.ncep.noaa.gov>

**To sign up for the NOMADS mailing list, visit**

<https://www.istsrv.ncep.noaa.gov/mailman/listinfo/ncep.list.nomads-ftpprd>



# Dissemination Technical Services

## TGFTP



As part of the continuing **NWS Telecommunications Gateway (NWSTG)** application transition to IDP, NCEP transitioned the public **anonymous ftp services** from the legacy systems in Silver Spring to the IDP system in College Park, MD.

This ftp server also fulfills international commitments for data distribution and most importantly the migrated application provides backup capabilities for the first time for this service.

### TGFTP Capabilities

- Access to a variety of weather products including climate data, forecasts, observations, watches and warnings
- 100% backup capability
- Public access

Name	Size	Date Modified
[parent directory]		
climate/		3/24/15, 12:00:00 AM
forecasts/		3/24/15, 12:00:00 AM
hurricane_products/		3/24/15, 12:00:00 AM
ls_SS_services	33.1 MB	5/19/15, 12:00:00 AM
marine/		1/5/16, 8:15:00 PM
observations/		3/24/15, 12:00:00 AM
products/		3/24/15, 12:00:00 AM
public_statement/		3/24/15, 12:00:00 AM
raw/		3/31/15, 12:00:00 AM
records/		3/24/15, 12:00:00 AM
summaries/		3/24/15, 12:00:00 AM
watches_warnings/		3/24/15, 12:00:00 AM
zonecatalog.curr/		6/30/15, 12:00:00 AM
zonecatalog.curr.tar	15.5 MB	6/7/07, 12:00:00 AM

TGFTP is available at: <ftp://tgftp.nws.noaa.gov/>





# Dissemination Technical Services

## Radar Level 2 and Radar Level 3



**NWS Level II Radar Receive Status as of Wed Jan 6 16:53:09 UTC 2016**

Key: Green=Up (Lvl2<5 min); Yellow=Warning (5<=Lvl2<30 min); Orange=Down (Lvl2&Lvl3<10 min); Red=Down (Lvl2>30 min)  
SiteID: Black=OK (L1=Latency<60 sec); White=Anomaly (L1=Latency>60 sec)  
SiteCodes: 01=Legacy Mag1; 02=Legacy Mag2; 03=Super-Res; 04=Recombined; 05=DP w/o Super-Res; 06=DP w Super-Res; 07=DP Recombined

**Eastern Region Radar Sites - Last receipt of data**

KABR06	KAPX06	KARX06	KATX06	KBB06	KCB06	KDB06	KFB06	KGB06	KHB06	KIB06	KKB06	KLB06	KMB06	KNB06	KOB06	KPB06	KRB06	KSB06	KTB06	KVB06	KWB06	KXB06	KYB06	KZB06
16:52:18	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21

23 sites up (92.0%) of 25 radar sites monitored

**Central Region Radar Sites - Last receipt of data**

KABR06	KAPX06	KARX06	KATX06	KBB06	KCB06	KDB06	KFB06	KGB06	KHB06	KIB06	KKB06	KLB06	KMB06	KNB06	KOB06	KPB06	KRB06	KSB06	KTB06	KVB06	KWB06	KXB06	KYB06	KZB06
16:52:18	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21

41 sites up (100.0%) of 41 radar sites monitored

**Southern Region Radar Sites - Last receipt of data**

KABR06	KAPX06	KARX06	KATX06	KBB06	KCB06	KDB06	KFB06	KGB06	KHB06	KIB06	KKB06	KLB06	KMB06	KNB06	KOB06	KPB06	KRB06	KSB06	KTB06	KVB06	KWB06	KXB06	KYB06	KZB06
16:52:18	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21

41 sites up (97.2%) of 47 radar sites monitored

**Western Region Radar Sites - Last receipt of data**

KABR06	KAPX06	KARX06	KATX06	KBB06	KCB06	KDB06	KFB06	KGB06	KHB06	KIB06	KKB06	KLB06	KMB06	KNB06	KOB06	KPB06	KRB06	KSB06	KTB06	KVB06	KWB06	KXB06	KYB06	KZB06
16:52:18	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21	16:52:21

44 sites up (97.8%) of 45 radar sites monitored

149 sites up (94%) of 158 total radar sites monitored

Radar Level II  
migrated to IDP in early June

**National Weather Service  
Telecommunication Operations Center**

Site Map News Organization

Home > Organization > OPS > TOC > Communications > RPCCDS > Radar Product Files

**Radar Product Files**

The U.S. National Weather Service provides anonymous FTP access to files containing collectives of code generated and binary radar imagery products from NWS, FAA, and DOD radar sites located in the United States and Puerto Rico. The collectives are in the same format as received from the WSR-88D Radar Product Generator (RPG) and the TDWR Supplemental Product Generator (SPG). The server internal structure for sub-directory names and file names can be found with descriptions in the document TOC File Name Standards. The naming conventions for the sub-directories and files are described in the document titled: **File and Directory Name Standards**. The data is available at the NWS Telecommunication Gateway on the server <http://tgftp.nws.noaa.gov> via anonymous FTP.

**Availability**

The data can be obtained either through a direct LDM data feed from the NWS or by standard ftp. Either process follows the directory path established below.

The **Implementation Guide** for a LDM connection is available.

**Directory and File Descriptions**

See **Directory and File Naming Standards** for information about directory and file name formats and structure.

**TO BE USED FOR FTP ACCESS**

DIRECTORY NAME	CONTENTS
SLus008001/	Data root - for NWS Telecommunication Gateway Server (top directory)
DF.of/	Data in NWS coded form either ASCII or Binary depending on product
DC.radar/	Data category: Above Surface - land (see radar site ID list below)
D.S.p2gsm/	Data Subcategory: general status of the radar message
D.S.p19r/	Data Subcategory: Base reflectivity - 124 nmi Range (angle = 0.5°)
D.S.p20.r/	Data Subcategory: Base reflectivity - 248 nmi Range (angle = 0.5°)
D.S.p27v/	Data Subcategory: Base Radial Velocity - 124 nmi Range (angle = 0.5°)
D.S.p30sw/	Data Subcategory: Base Spectrum Width - 124 nmi Range (angle = 0.5°)
D.S.32dhr/	Data Subcategory: Digital Hybrid Scan Reflectivity
D.S.34cfl/	Data Subcategory: Clutter Filter Control (Segment 1)
D.S.34cfl2/	Data Subcategory: Clutter Filter Control (Segment 2)

Radar Level III  
migrated to IDP in early July

**NWS Level III Radar Receive Status as of 01.06.2016 wed 16:49:58 utc**

SITES - Last receipt of data from

no latency latency > 10 mins latency > 25 mins (operator notes available) latency > 25 mins (no operator notes)

KABR06	KAPX06	KARX06	KATX06	KBB06	KCB06	KDB06	KFB06	KGB06	KHB06	KIB06	KKB06	KLB06	KMB06	KNB06	KOB06	KPB06	KRB06	KSB06	KTB06	KVB06	KWB06	KXB06	KYB06	KZB06
16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	16:49:58	

89 sites up (94%) = 201 sites monitored

**from Radar Sites**

here to read the messages received within the last 24 hours

The latest Radar Level III data is available at: <http://tgftp.nws.noaa.gov/SL.us008001/DF.of/DC.radar/>  
The latest Radar Level II data is available at: <http://www.ncdc.noaa.gov/nexradinv/choosesite.jsp>





# Dissemination Technical Services

## Model Analysis and Guidance (MAG)



### The Model Analysis and Guidance (MAG)

website displays GIF (Graphical Interchange Format) images of the output of NCEP's weather prediction models; observational data in the form of SKEW-T and station plots; output from the Real Time Data Analysis model and hurricane model information when storms are active.

The application runs in two environments:

1. The Weather and Climate Operational Supercomputer System (WCOSS) to consume gridded model data and produce images.
2. A public facing Web Server farm where web navigation code provides an organized interface to the data and a set of bookmark able URLs that customers can use to directly access the latest images.

The Model Analyses and Guidance (MAG) website is available at <http://mag.ncep.noaa.gov>

# Dissemination Technical Services

## Meteorological Assimilation Data Ingest System (MADIS)

The **Meteorological Assimilation Data Ingest System (MADIS)** is a high-resolution (spatially & temporally) global data ingest, integration, Quality Control (QC), and delivery system.

**MADIS Data Application**

**Form Instructions**

The purpose of this Data Application is to become a registered MADIS User to retrieve MADIS data products. The following form fields are required:

1. Applicant Information (all fields)
2. Data Communications Information (all fields)
3. Organization Information (all fields)
4. Data Request Information: Request Type

Under **Data Request Information** be sure to select one or more datasets.

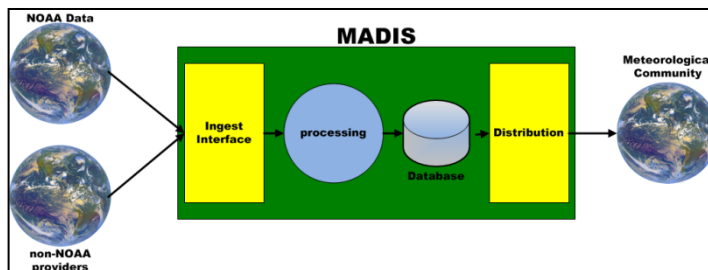
MADIS Data Applications are sent to MADIS Support for review. Data Applications received by COB Wednesday (21 00 UTC) will be processed the following Monday. A MADIS Support Senior Production Analyst will contact you once your account has been created to provide you with your MADIS login credentials.

**Data Use Policy**

Recipients of MADIS data from the National Oceanic and Atmospheric Administration (NOAA) are expected to complete this application and acknowledge having read the disclaimer information and usage suggestions detailed below. For more information please contact [madis-support@noaa.gov](mailto:madis-support@noaa.gov).

Some of the datasets are restricted. Those receiving these datasets are expected to comply with the restrictions. [Click here for details.](#)

This form can be used to establish new accounts, make changes in existing accounts, or to request archived data.



**Data Request Information**

**Request type**

- ☐ Real time
- ☐ Archive (saved real-time data – observations only, not grids)

**Datasets (Choose all desired)**

**Observations**

- ☐ Meteorological Surface
  - ☐ METAR (standard)
  - ☐ SAO
  - ☐ Maritime
  - ☐ Integrated Mesonet
  - ☐ National Mesonet/UrbanNet
  - ☐ High Frequency METAR (experimental)
  - ☐ Climate Reference Network (CRN)
  - ☐ U.S. Historical Climatology Network - Modernization (USHCN-M)
  - ☐ New England Pilot Project (NEPP)
- ☐ Radiosonde
- ☐ NOAA Profiler Network
- ☐ Radiosonde
- ☐ Satellite Wind
  - ☐ GOES Operational 3-Hour
  - ☐ GOES Experimental 1-Hour
  - ☐ Satellite Sounding
  - ☐ Satellite Radiance
- ☐ Automated Aircraft
  - ☐ Automated Aircraft Reports
  - ☐ Profiles at Airports
- ☐ Hydrological Surface
  - ☐ Snow
  - ☐ Multi-Agency Profiler
  - ☐ WISDOM Balloon Wind

**Grids**

- ☐ Rapid Update Cycle (RUC) Surface Assimilation System (RSAS) Surface Analysis Grids

**MADIS Meteorological Surface Text/XML Viewer**

**Time Selection**

0: [ ] Nominal time as GMT (YYYYMMDD\_HHMM or date 0 for current time) [Time Window Options] [Help]

**Station Selection**

\* Get stations within state's box ☐ Get stations within latitude/longitude corners ☐ Our Stations ☐ Get all stations

AK \* (State) 0.0 (SW corner latitude - south) (State ID e.g. KZNN) ☐ Get all stations

0.0 (SW corner longitude - west) ☐ Get all stations

0.0 (NE corner latitude - north) ☐ Get all stations

0.0 (NE corner longitude - east) ☐ Get all stations

**Provider Selection**

\* All providers ☐ Select providers groups and/or datasets [Help]

**Variable Selection**

\* Standard surface variables (TD,REL,T,DD,FF,FGOUST,ALTSSE) ☐ Select variables [Help]

**Quality Control Selection**

Return observations passing level 1 [Help]

**Output Selection**

\* Text ☐ XML ☐ CSV (No QC) ☐ CSV (QC desc) ☐ CSV (QC full) [Help]

**MADIS Hydrological Surface Text/XML Viewer**

**Time Selection**

0: [ ] Nominal time as GMT (YYYYMMDD\_HHMM or date 0 for current time) [Time Window Options] [Help]

**Station Selection**

\* Get stations within state's box ☐ Get stations within latitude/longitude corners ☐ Our Stations ☐ Get all stations

0.0 (State) 0.0 (SW corner latitude - south) (State ID e.g. BMTC) ☐ Get all stations

0.0 (SW corner longitude - west) ☐ Get all stations

0.0 (NE corner latitude - north) ☐ Get all stations

0.0 (NE corner longitude - east) ☐ Get all stations

**Provider Selection**

\* All providers ☐ Select providers groups and/or datasets [Help]

**Variable Selection**

\* Accumulated Precipitation Variables (PCPM,PCPH,PCPSH,PCPD) ☐ Select variables ☐ All variables [Help]

**Quality Control Selection**

Return observations passing level 1 [Help]

**Output Selection**

\* Text ☐ XML ☐ CSV (No QC) ☐ CSV (QC desc) ☐ CSV (QC full) [Help]

The data sets are available via HTTP, FTP and LDM. A web form for requesting specific data may be found at [https://madis-data.ncep.noaa.gov/madis\\_datasets.shtml](https://madis-data.ncep.noaa.gov/madis_datasets.shtml)

Users must be registered for all levels of access to the data and should contact the MADIS Helpdesk at [madis-support@noaa.gov](mailto:madis-support@noaa.gov). The Helpdesk will also assist users who require FTP or LDM access to the data.



# Dissemination Technical Services

## *Meteorological Assimilation Data Ingest System (MADIS)*



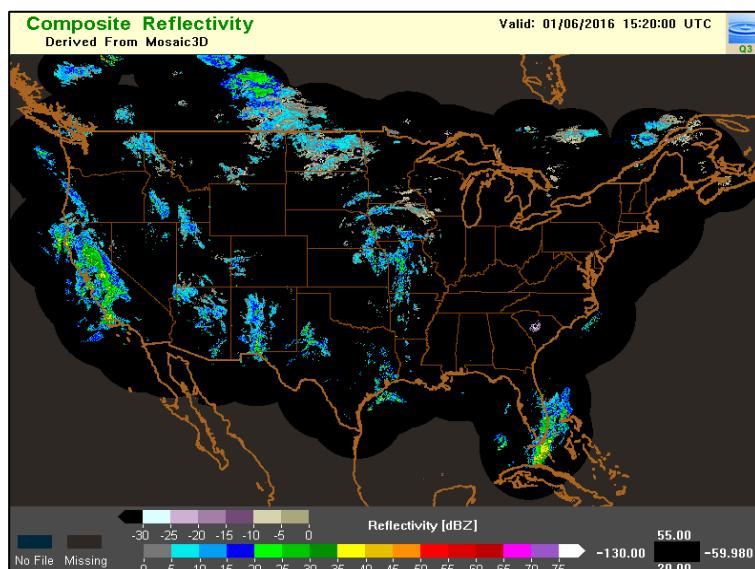
Services	Current Capabilities	Future Capabilities
<b>High Resolution Meteorological and Hydrological Data</b>	Mesonet, Hydro, Maritime, METAR, Profiler, Aircraft Based Observations (ABO) , Mobile Platform Environmental Data (MoPED), Snow, Radiometer, and Satellite( Winds, Sounding, and Radiance)	Hydrological Automated Data System (HADS)/Automated Flood Warning System (AFWS), SNOw TElemetry (SNOTEL), One Minute ASOS, <i>Clarus</i> (Atmospheric and Road Weather data), TAMDAR, EDR, and WVSS
<b>Understanding of Observation and Observation Quality</b>	MADIS currently collects and stores limited observational metadata which limits the rough quality checks that can be performed on the observations.	MADIS is working with the National Mesonet (NM) program and <i>Clarus</i> on improved metadata. MADIS is working to build a Quality Control sandbox that will support the current MADIS QC and once implemented the <i>Clarus</i> QC.
<b>Data Delivery</b>	MADIS currently supports ftp, Idm, and https protocols. MADIS netCDF files are available using ftp and Idm. Text, CSV, and XML formats are available using https. MADIS provides graphical interfaces for viewing MADIS surface and hydro data sets.	MADIS will add the ability for users to receive HADS/AFWS and SNOTEL data in SHEF format. MADIS is working with NWS and the FAA on standardized data discovery and delivery methods. MADIS is working to provide one graphical interface for displaying all MADIS data. MADIS is working to provide all data fully Qced within a minute of receipt.





MRMS is a system with automated algorithms that quickly and intelligently integrate data streams from multiple radars, surface and upper air observations, lightning detection systems, and satellite and forecast models.

Name	Last modified	Size
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	<a href="#">Brugh/BsTopHeight</a>	06-Jun-2016 15:30	-
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	<a href="#">EchoTop_100</a>	06-Jun-2016 15:32	-
	<a href="#">EchoTop_50</a>	06-Jun-2016 15:32	-
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	<a href="#">GaugeCorr_OPE_72H</a>	06-Jun-2016 15:00	-
	<a href="#">GaugeOnly_OPE_01H</a>	06-Jun-2016 15:18	-
	<a href="#">GaugeOnly_OPE_03H</a>	06-Jun-2016 15:18	-
	<a href="#">GaugeOnly_OPE_06H</a>	06-Jun-2016 15:18	-
	<a href="#">GaugeOnly_OPE_12H</a>	06-Jun-2016 15:18	-
	<a href="#">GaugeOnly_OPE_24H</a>	06-Jun-2016 15:18	-
	<a href="#">GaugeOnly_OPE_48H</a>	06-Jun-2016 15:00	-
	<a href="#">GaugeOnly_OPE_72H</a>	06-Jun-2016 15:00	-
	<a href="#">H0_Absorb_20C</a>	06-Jun-2016 15:32	-
	<a href="#">H0_Absorb_0C</a>	06-Jun-2016 15:32	-
	<a href="#">H0_Absorb_40C</a>	06-Jun-2016 15:32	-
	<a href="#">H0_Absorb_60C</a>	06-Jun-2016 15:32	-
	<a href="#">H0_Absorb_80C</a>	06-Jun-2016 15:32	-
	<a href="#">HAWAII</a>	14-Dec-2015 15:39	-
	<a href="#">HeightCompositeReflectivity</a>	06-Jun-2016 15:32	-
	<a href="#">HeightOnlyEvapCompositeReflectivity</a>	06-Jun-2016 15:32	-
	<a href="#">LayerCompositeReflectivity_High</a>	06-Jun-2016 15:32	-
	<a href="#">LayerCompositeReflectivity_Low</a>	06-Jun-2016 15:32	-

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Name	Last modified	Size	
<a href="#">Parent Directory</a>			
<a href="#">MergedReflexivityQC_00_50</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_00_75</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_01_00</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_01_25</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_01_50</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_01_75</a>	06-Jan-2016 15:37		
<a href="#">MergedReflexivityQC_02_00</a>	06-Jan-2016 15:37		
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<a href="#">MergedReflexivityQC_19_00</a>	06-Jan-2016 15:38		

For an LDM feed contact the IDP On-boarding Team at [ncep.list.idp\\_support@noaa.gov](mailto:ncep.list.idp_support@noaa.gov)

Descriptions of the MRMS data sets may be found at: <http://www.nssl.noaa.gov/projects/mrms>

*MRMS produces and issues a suite of more than 100 high resolution products over North American on a 1-km grid every 2 to 5 minutes. These data are used in weather forecast models, and for severe weather, aviation, and hydrometeorology forecasts.*



# Dissemination Technical Services

## *IDP Geographic Information System (GIS)*



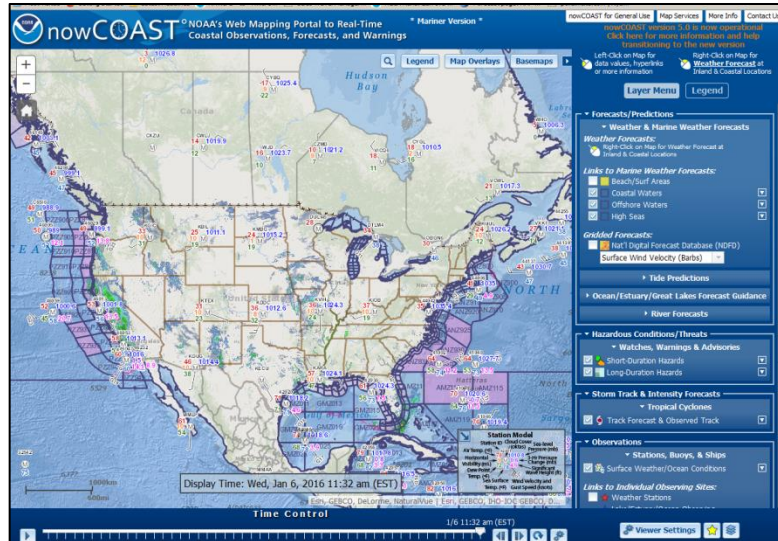
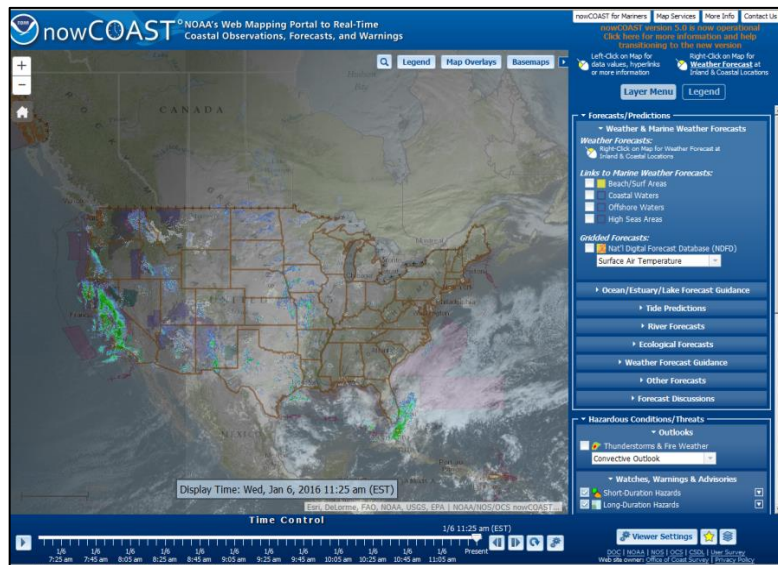
The Integrated Dissemination Program (IDP) Geographic Information Systems (GIS) Project provides 7/24 access to NOAA data in Open Geospatial Consortium (OGC) compliant web service standard formats.

Services	Current Capabilities	Future Capabilities
NowCoast	Interactive viewer with two user interfaces, general interest and mariner. Time enabled services with ability to step the data through time via slider on the viewer. OGC compliant web mapping service include 60 NWS services.	Enhanced cartography based on user feedback during the August 2015 stability test. Additional NOAA data as web services and layers on the interactive viewer.
IDP GIS Services	Final stages of quality assurance for dynamic NWS web mapping services, in addition to those already available at NowCoast and NOS static services such as Environmental Sensitivity Indices.	Conduct 30 day stability test (Jan/Feb 2016) Services become Operational (Q2FY16)



# Dissemination Technical Services

## IDP Geographic Information System (GIS)



nowCOAST Information Depot

Info Depot

- About nowCOAST
- Latest News
- Help
- Map Services

Available Services

- Observations
- Imagery
- Surface Analyses
- Watches, Warnings & Advisories
- Forecasts
- Meteorological Forecast Guidance
- Ocean Forecast Guidance
- Geo-Referenced Hyperlinks

LayerInfo Web Service

Contact Us

nowCOAST NOAA's Web Mapping Portal to Real-Time Coastal Observations, Forecasts, and Warnings

The nowCOAST ArcGIS Server REST Service Directory can be found at <http://nowcoast.noaa.gov/arcgis/rest/services/nowcoast/>.

For some of its map layers, nowCOAST provides both time-enabled and 'time offsets' (forecast projection-based) web map services since some users may not be able to utilize the time-enabled map services. For example, maps of forecast guidance from NOS' operational oceanographic forecast modeling systems are available via time-enabled web map services as well as by specific forecast projections in time-offset web map services.

If incorporating nowCOAST map services into your own application, you may find the nowCOAST [LayerInfo web service](#) to be valuable, as it allows the querying of information about map services and layers that may not be available directly from ArcGIS Server, such as dataset time coverage (valid times), timestamps, and legend graphics. Please see the [LayerInfo help documentation](#) for detailed information.

WMS Users: Please note that, due to software limitations, the layer identifiers found in a WMS GetCapabilities response may not match the layer identifiers of the corresponding ArcGIS REST Map Service, so extra care must be taken to ensure the correct identifiers are being specified for the desired layers. Please read through the [GetCapabilities XML](#) to determine what Layer Identifiers (the value of the corresponding <Name> element) are valid for a particular map service. The use of an invalid Layer Identifier in your request can result in a blank image or an undesired layer being drawn. If using a nowCOAST WMS in conjunction with the nowCOAST [LayerInfo web service](#), the layer identifiers included in LayerInfo queries should match the ArcGIS REST Map Service layer identifiers (as shown on the REST Map Service Information page), not those found in the WMS GetCapabilities response.

A list of nowCOAST time-enabled, time offsets, and map overlay web map services grouped by data layer types, along with brief descriptions of each, is given below.

If you have questions about nowCOAST map service usage, please review the [Map Services FAQ](#) or [contact the nowCOAST team](#) for further information.

### MAPS OF DATA, ANALYSES, FORECASTS, WATCHES/WARNINGS & MODEL GUIDANCE

#### 1. OBSERVATIONS

##### Near-Real-Time Surface In-Situ Observations

Map Service Name:	obs_meteocean_instu_sfc_time
Service Type:	Time Enabled
Description:	Map displaying the latest surface weather and marine weather observations from land stations and overwater observing platforms for USA and other countries. This includes but not limited to observations from airports (ASOS, AWOS), coastal stations (C-MAN, NWLON, PORTS, NERS), ad rgs, state mesonets, feed buoys, drifting buoys, voluntary observing ships, regional ocean observing systems and other networks (e.g. RAWs, Chrota Reference Network, USGS weather stations). The observations are displayed using the weather map station model which is used by operational meteorological centers and offices around the world.
Notes:	Presently, the map does not contain cloud cover amount (e.g. scattered clouds) or present weather conditions (e.g. heavy rain). *
ArcGIS Server REST URL:	<a href="http://nowcoast.noaa.gov/arcgis/rest/services/nowcoast/obs_meteocean_instu_sfc_time/MapServer">http://nowcoast.noaa.gov/arcgis/rest/services/nowcoast/obs_meteocean_instu_sfc_time/MapServer</a>
WMS GetCapabilities URL:	<a href="http://nowcoast.noaa.gov/arcgis/rest/services/nowcoast/obs_meteocean_instu_sfc_time/MapServer?request=GetCapabilities&amp;service=WMS">http://nowcoast.noaa.gov/arcgis/rest/services/nowcoast/obs_meteocean_instu_sfc_time/MapServer?request=GetCapabilities&amp;service=WMS</a>

#### 2. IMAGERY

##### Recent Satellite Fused Lightning Strike Density Imagery





# Dissemination Technical Services

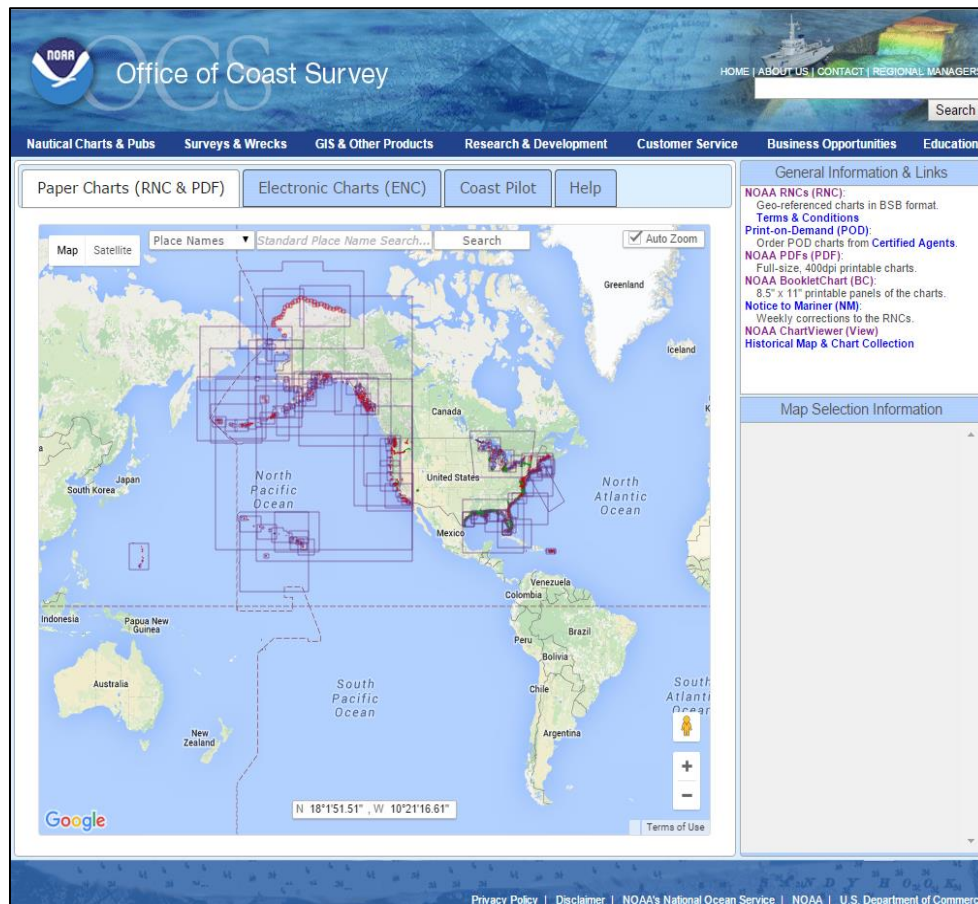
## National Ocean Service Chart Tile Service



The **National Ocean Service (NOS) Chart Tile Service** provides the public with access to, and information about, NOAA navigation products.

Services provided on the Chart Tile website include paper and digital charts such as Electronic Navigational Charts (ENCs) and Raster Navigational Charts (RNCs), which are graphical interfaces that allow you to view the outline of the area covered by each product.

In addition to ENC and RNC page graphical pages, there are text-only pages that provide direct access to the products available for download.



NOS Chart Tile is available at <http://www.charts.noaa.gov/>



# Dissemination Technical Services

## *National Tsunami Warning Center Website*



The **National Tsunami Warning Center (NTWC)** based in Palmer, Alaska provides tsunami watches, warnings and advisories affecting the Atlantic and Pacific coastlines of the United States and Canada as well as Puerto Rico and the Virgin Islands.

Given the importance of tsunami data, the NTWC currently hosts its website on IDP infrastructure in order to enhance the availability, performance, and reliability of its services.

The screenshot displays the National Tsunami Warning Center website. The header includes the NOAA logo and navigation links for Home, News, Organization, and a search bar. A green banner states "No Watch, Warning, or Advisory" for the continental U.S., Canada, Alaska, Puerto Rico, and the Virgin Islands. Below this, a yellow box titled "Last Event Details" shows a traffic light icon and provides information about an earthquake: Location: near the coast of Chiapas, Mexico; Magnitude: 6.6, Depth: 72.7 (Mi); Lat: 15.8° N Lon: 93.5° W; Origin Time: 12/17/2015 2:49:56 PM. A blue box below the yellow one contains information about the tsunami danger for the U.S. West Coast, British Columbia, and Alaska, stating that no tsunami is expected based on the earthquake's depth. The bottom section features a map of the Pacific Ocean with a red icon indicating the earthquake location. The map includes a "Satellite" dropdown menu and a "Google" logo. The footer of the map shows "Imagery ©2015 NASA, TerraMetrics" and "1000 km" scale.

The NTWC website is available at <http://wcatwc.arh.noaa.gov/>



# Dissemination Technical Services

## *NWS Telecommunications Gateway*



NWS Telecommunication Gateway (NWSTG) is the Nation's hub (24x7) for collection and distribution of extensive range of weather data and products (surface observations, models, radar imagery, satellite imagery, buoy data, watches and warnings, and forecasts). NWSTG is also the Region IV Global Information System Center (GISC).

Currently being migrated to the IDP Infrastructure as part of the NWSTG Re-architecture Project. The scope of the project includes a range of fundamental changes:

- Hardware (moving away from legacy hardware into a Virtual infrastructure)
- Software (transition into a standardized, common Operating System)
- Network infrastructure (activation and integration of the One-NWS Network)

	Current Capabilities	Future Capabilities
<b>Enterprise Network</b>	<u>Limited capacity and infrastructure</u> : Inadequate capacity to accommodate projected increases of satellite, model and radar data	Accommodate projected increases in satellite (e.g., GOES-R), model, and radar data by through use of the IDP infrastructure to provide a scalable, virtual, reliable and flexible network environment.
<b>Backup Services</b>	<u>Limited backup capability</u> : 74% backup operational capability that could result in more than 90% loss in weather observations and degraded forecast accuracy	With activation of the IDP data center located at the David Skaggs Research Center (DSRC) in Boulder, CO, a 100% backup capability for all NWSTG services will be ready to meet NWS WRN goals.





# Family of Services *Background*



## **Family of Services (FOS) partners uses legacy NWS services that will be decommissioned**

- NWSTG in Silver Spring, MD and Fairmont, WV will be decommissioned in FY17 Q1 and NWSTG functions are being migrating to the IDP platforms in College Park and Boulder
- OPSNET will be decommissioned in FY17 Q4 and replaced with IDP's GRP One-NWS network


## **Cannot use FOS funding**

- Funds arrive too late to be used and have continuing audit issues
- FY 15 FOS partnership agreement was not signed



# Family of Services

## *Benefits and Challenges of Moving to IDP*

Benefits	Challenges
<p><b>Improved services with IDP</b></p> <ul style="list-style-type: none"><li>✓ Model (e.g., HRRR, GFS, SREF)</li><li>✓ Radar (e.g., MRMS)</li><li>✓ Satellite (e.g., GOES-R, JPSS)</li><li>✓ GIS (e.g., over 600 services with nowCOAST)</li><li>✓ IDSS (e.g., Impact Catalog)</li></ul> <p><b>Sustainable and Secure</b></p> <ul style="list-style-type: none"><li>✓ Cost effective compared to OPSnet services</li><li>✓ Fixes security network issues by moving FOS partners behind the TIC and makes NWS OMB-08-05 compliant (assumes using the Internet)</li><li>✓ Simplifies network topology and routing; currently too many ingresses/egresses into the NWS network</li></ul> <p><b>Eliminates perceived favoritism to FOS partners from the broader Weather Enterprise partners</b></p>	<p><b>Potential changes to FOS business processing using new vs legacy services/products</b></p> <p><b>Bandwidth requirements may increase Internet access costs for some users</b></p> <p><b>FOS partners will need to make networking changes to route over their local Internet access points</b></p>  <p><u>Mitigation: Full time IDP staff from NCEP Central Operations (NCO) available to guide transition from legacy services to IDP infrastructure</u></p>

Migrating to IDP will provide existing FOS partners with improved services and help ensure reliable and affordable access to NWS products over the long-term.



# Family of Services

## *IDP vs. FOS (Legacy NWSTG)*



Service/Capability	IDP	FOS (Legacy NWSTG)
100% Backup	Yes College Park (FY14) & Boulder (FY16)	No Silver Spring, MD
Backbone	10 Gbps Physically Diverse (100 Gbps FY17)	45 Mbps Multiple single points of failure
TIC Compliant	Yes	No
Budget Sustainable	Yes	No
Model data	Yes - All	Partial – < 5% and decreasing
MADIS	Yes	No
MRMS	Yes	No
GOES-R/JPSS Readiness	Yes	No





# THANK YOU!

